

## RESEARCH ARTICLE

# Adverse Effects Post Covid -19 Vaccination and Its Association with Age, Gender and Comorbid Disease in Basrah City Southern of Iraq

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**Abstract: Background:** Vaccination against COVID-19 virus is the most valuable tool available for protection during the pandemic of coronavirus. The clinical manifestation post-vaccination is a barrier to vaccination for many people in Iraq and worldwide.

**Objective:** The objective of this study is identifying various clinical manifestations occurring after receiving vaccines among individuals in Basrah Governorate. Moreover, we examine its association with respondents' demographics and the type of vaccine they received.

**Method:** A cross-section study was conducted in Basrah, southern Iraq. Research data were collected through an online questionnaire. The data were analyzed using both descriptive and analytic statistical tools using the SPSS program.

**Results:** Most of the participants (86.68%) received the vaccine. The side effects were reported in 71.61% of vaccinated individuals. Fever and muscle pain were the two most experienced clinical manifestations, while lymph node enlargement and disturbances in taste and/or smell sensations were reported infrequently. Adverse effects were mostly reported with the Pfizer BioNTech vaccine receiver. Females and those in the younger age group also reported a significantly higher incidence of side effects.

**Conclusion:** Most adverse effects related to the COVID-19 vaccine were minor and could be tolerated without the need for hospital admission.

**Keywords:** COVID-19, Vaccination, Adverse effects, Age, sex, comorbidity.

## 1. INTRODUCTION

The pandemic of coronavirus disease 2019 (COVID-19) caused by novel coronavirus 2 (SARS-CoV-2) evolved into a global health crisis. Coronavirus is transmitted by close and direct contact with infected patients [1]. The number of confirmed positive cases of COVID-19 in Iraq were 1,552,848 and about 123,323 active cases in July 2021, according to WHO report [2].

Measures for protection against viruses, like quarantine, physical distancing, and social isolation are expected to be effective in decreasing viral transmission. However, these measures do not stop the virus's rapid spread [3]. The extensive morbidity and mortality of COVID-19 make the

development of effective and safe vaccines against the SARS-CoV-2 virus one of the primary scientific goals of researchers worldwide. Near the end of 2020, more than two hundred vaccine candidates have been studied in various phases of development. After that, about thirty vaccines got emergency approval in several countries [4,5]. Many types of vaccines were produced based on the SARS-CoV-2 virus mRNA sequence. These vaccines are produced by many techniques like recombinant viral vectors, inactivated viral vaccines, spike subunit protein vaccines, and mRNA genetically engineered vaccines [6,7]. Three vaccines were approved for the use in Iraq, including the Chinese vaccine (Sinopharm), the American vaccine (Pfizer), and the British vaccine (AstraZeneca, Oxford vaccine). The first one was the Sinopharm vaccine or Chinese vaccine produced by traditional method as inactivated vaccine that can not cause the disease [8]. The second one was nucleoside-modified messenger RNA (Pfizer-BioNTech) COVID-19 vaccine, a novel

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